

# Relevant Issues in Market Design at National & European Level

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# Overview - key elements in market design

- Energy markets
- Balancing mechanisms
- Transmission access
- Transmission charging

# Energy Markets

- National distinctions

- pool/bilateral; trading timescales, etc.
- implicit/explicit transmission
- competition and liquidity
- power exchanges
- market power
- security of supply (e.g. market-based or administered)

- European integration

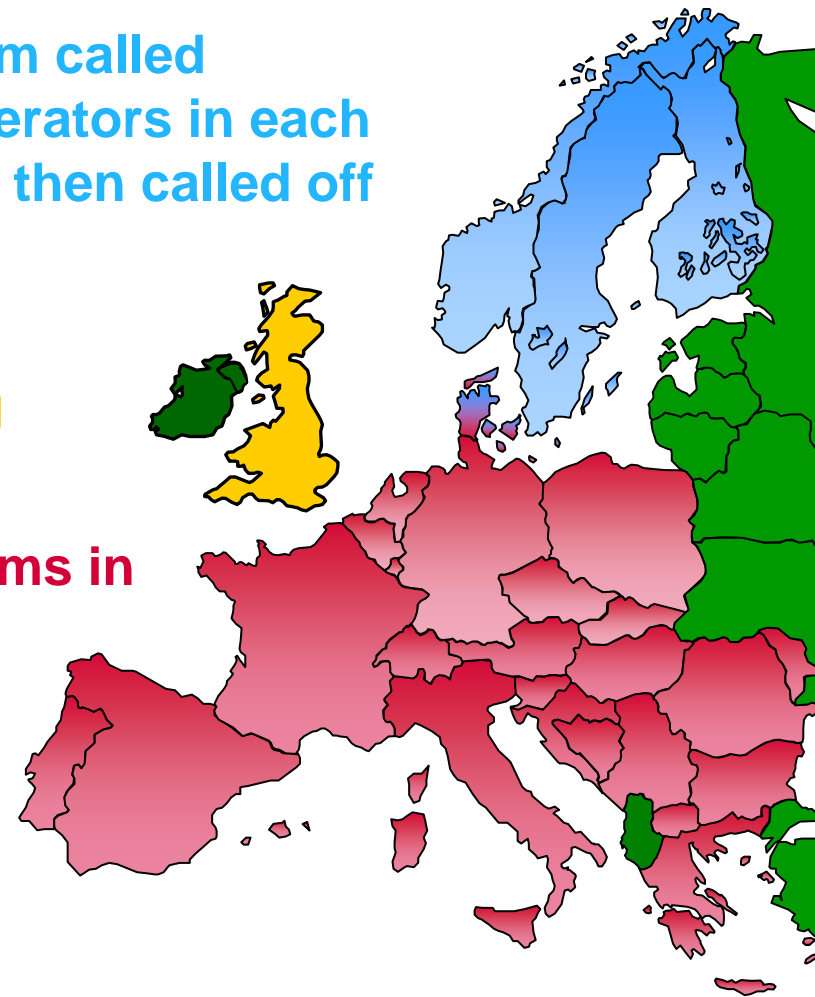
- market integration/coupling
- co-ordinated management of transmission flows

# Current Balancing Arrangements in Europe

**Nordel - common balancing mechanism called 'bidladder'. Bids for reserve from generators in each country are stacked in price order and then called off by the TSOs as required.**

**GB - Balancing Mechanism. Islanded system therefore fast acting balancing services required.**

**UCTE - Individual balancing mechanisms in most countries. Secondary Control (AGC) alters approach to balancing. Reserves used in longer timescales to manage large energy imbalances, rather than frequency**



# Transmission Access

- National distinctions

- explicit/implicit markets
- firm/non-firm access rights
- market/rule-based congestion management
- timescale differences
- differences in TSO/PX roles

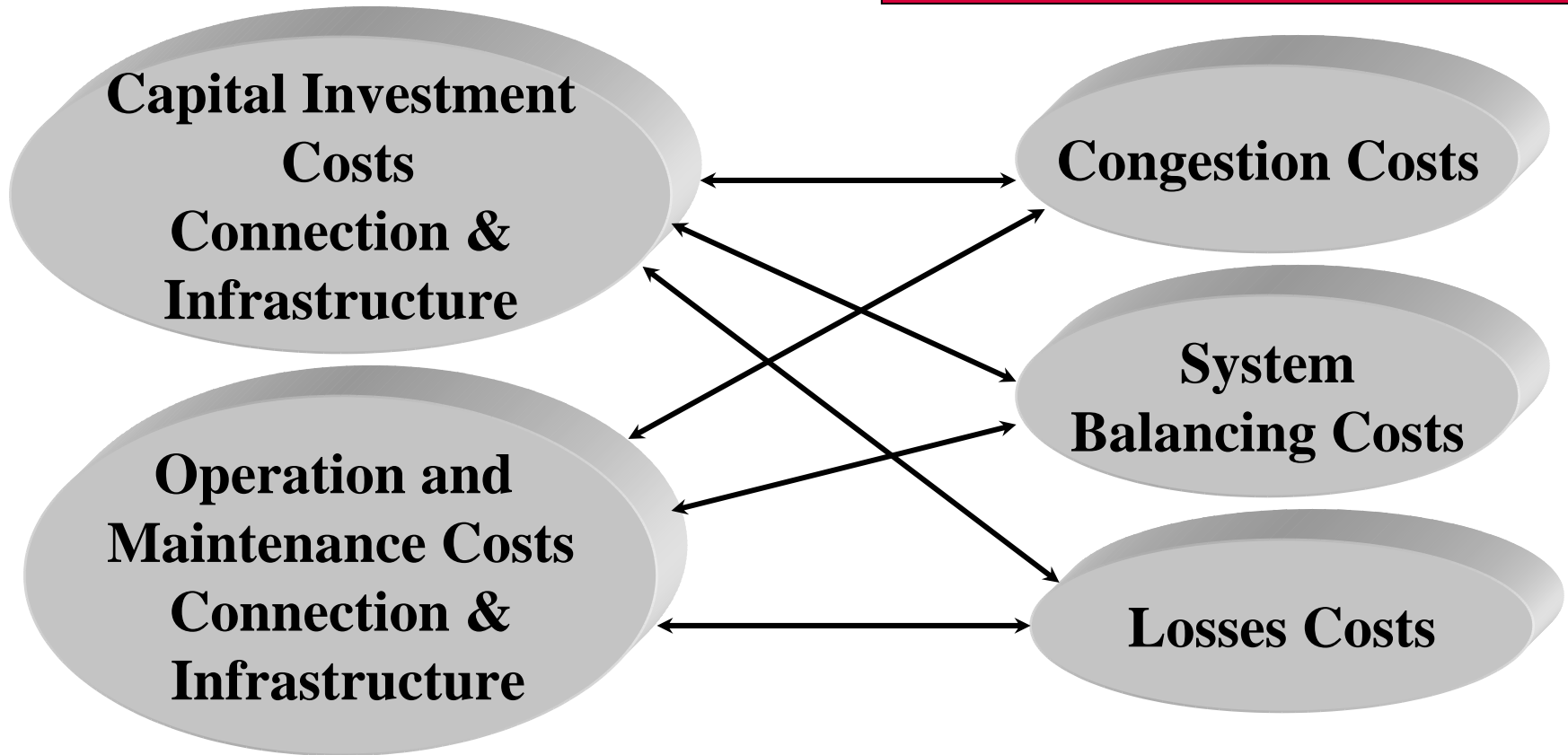
- European integration

- simplified transmission model (fixed-price areas)?
- designation of firm (regional) and non-firm (inter-regional) access?
- focus on integration day-ahead?
- forward trading via PTRs, FTRs, financial hedges?

# Transmission Costs

**Asset Costs**

**System Operation Costs**



# Transmission Charges

- National distinctions

- cost-reflectivity and economic signals (e.g. SRMC, LRMC, flat)
- deep/shallow connection-infrastructure boundary
- base (G and/or D) and basis (kW and/or kWh)
- legal/political/regulatory (e.g. ability to change property rights)

- European integration

- need for harmonisation (of principles, methodology or tariffs?)
- approximation of idealised pan-European charges by subsidiarity complemented by cross-border arrangements?
- consistency of locational signals across borders requires agreed framework (e.g. a European reference location)
- cross-border funding of TSOs

# Summary

- Present position in Europe characterised by significant differences in national energy markets, balancing mechanisms and transmission access and charging
- Some harmonisation needed for European integration, but also need to meet specific regional requirements
- The ‘big picture’ must be kept in mind (e.g. pan-European tariffs are pointless without consistent access arrangements)
- Transmission issues are key to enabling efficient energy market integration